

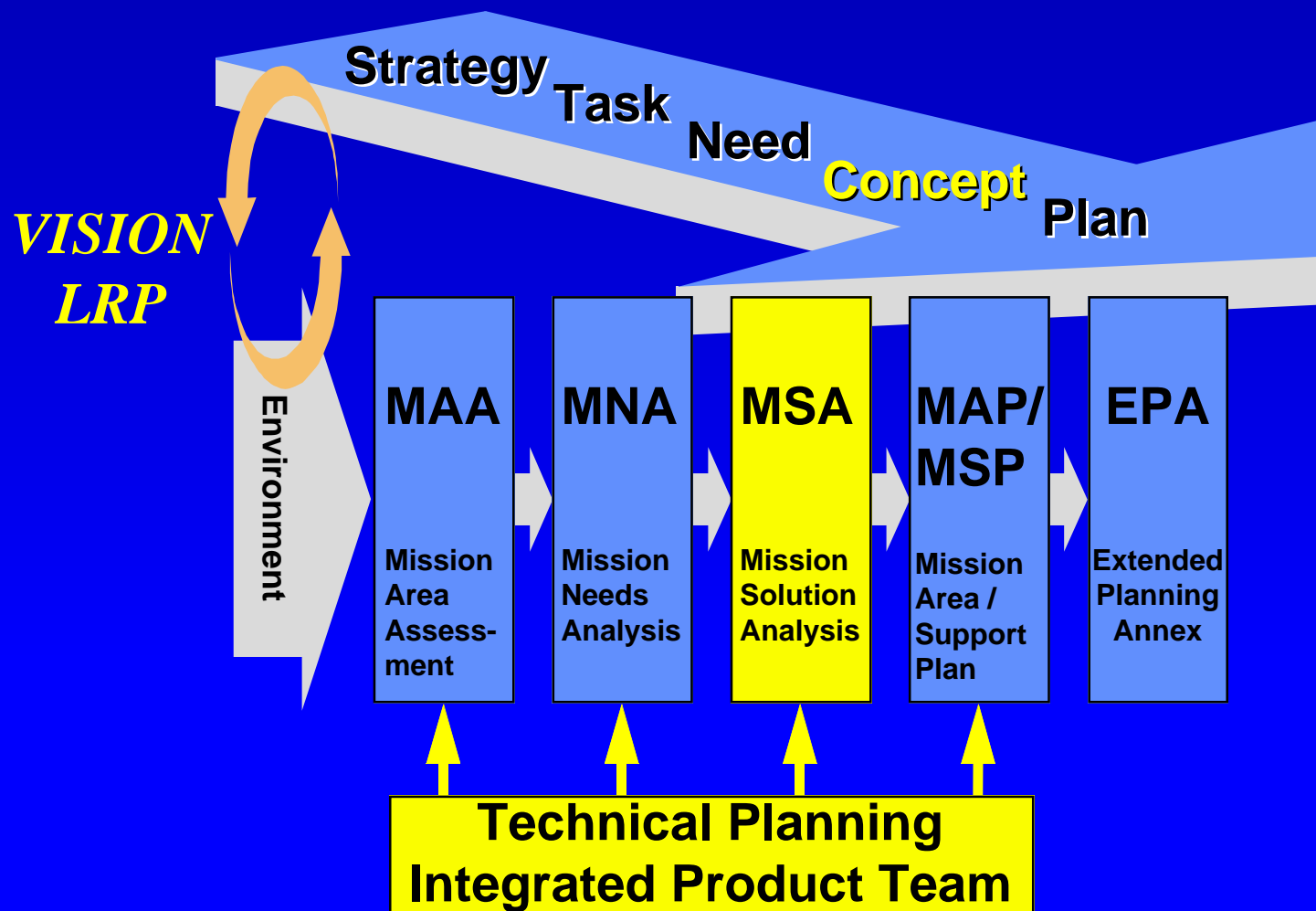
# Technical Planning Integrated Product Teams (TPIPTS)

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Presented by:  
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ESC/ACP  
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# Modernization Planning Process

[AFPD 10-14 (3 Mar 95) - MODERNIZATION PLANNING]



# Modernization Planning Process

AFPD 10-14 (3 Mar 95) - MODERNIZATION PLANNING

This policy directive establishes the Modernization Planning process...

- Each MAJCOM identifies and plans all mission areas for which it is responsible
- MAJCOMs use AFMAN 1-1 as a guide to avoid proliferating mission areas and to ensure they properly classify command activities
- HQ AFMC supports the preparation of MAAs, MNAs, and MAPs/FAPs[MSPs] through Technical Planning Integrated Product Teams (TPIPT)
- TPIPTs coordinate user, AFMC, national laboratories, industry, and academia input to the MAA, MNA, and MAP process, and support the planning process with modeling, simulation, analyses, concept development, technology need identification, and pricing
- A Mission Area Plan (MAP) is the primary product of this process
- MAPs cover periods of 25 years... comprises individual Weapon's System/ Capability Roadmaps outlining a modernization plan and descriptions of Critical Enabling Technologies that are the contribution of science and technology programs

# Technical Planning Integrated Product Teams (TPIPTs)

## MPP Handbook (DRAFT 20 Oct 96)

- led by a designated chief who is assigned a core team of full-time, direct personnel
- TPIPT Chief is a member of the corresponding MAT
- support the MAT/MST during the entire MPP, with particular emphasis on the MSA
- conduct concept identification and assessment for each mission area
- comprised of many organizations and functional backgrounds, including SPOs, Air Force and national laboratories, industry, warfighters, and planners
- provide unbiased recommendations for materiel solutions to needs identified by the MATs
- identify, consolidate and analyze materiel solutions to identified deficiencies and needs
- document detailed descriptions of the concepts, analytical methodologies, results, and associated concept development roadmaps and technology needs in the DP
- link DPs to the appropriate MAPs and MSPs
- identify the critical technology needs which provide the framework used by the laboratories and industry to identify and assess various concept technologies
- identify appropriate technology projects and demonstrations to assess these technologies

# The TPIPTs

MAJCOM	OPR	TPIPT	Chief
ACC	ASC /XRC	Air Superiority	Maj Evan Marlin
ACC	ASC /XRG	Air to Surface	Maj Ed Jespersen
AETC, ACC, AMC, AFSOC	ASC /XRT	Aircrew Training	LtCol Timothy Chyate
AMC	ASC /XRM	Mobility	Lou Salerno
ACC	ASC /XRR	Rescue	Maj Dave Kyger
ACC	ASC /VXX	Air Base Systems	Tim Spore
AFSOC	ASC /XRS	Special Operations Forces (SOF)	Maj Mark Hornbostel
ASC2A	ESC /ACP	Air and Space Command & Control (ASC2)	Mark Siewers
ALL	ESC /ACP	Intelligence, Surveillance & Reconnaissance	LtCol Steve Chmelski
AWS	ESC /ACP	Weather	Capt David Speltz
ALL	ESC /IYW	Information Operations	Maj Richard Simpson
ALL	HSC /XRE	Environment, Safety and Occupational Health	LtCol Brian McCarty
ALL	HSC /XRH	Education and Training	LtCol Bill Wilmpee
ALL	HSC /XRT	Human Systems Integration (HSI)	Col Mel O'Neal
AFMSA	HSC /XRM	Operational Medicine (OPMEDS)	LtCol Dennis Scholl
AFSPC	SMC /XRTC	Space Control	LtCol Edgar Hernandez
AFSPC	SMC /XRTE	Space Force Enhancement	LtCol Russell Solt
AFSPC	SMC /XRTS	Space Operations	Maj Michael J. Grah
AFSPC	SMC /XRTF	Space Force Application	Capt James Holder

ESC Program Involvement:

HIGH  
MODERATE  
LOW



*“If you’re not in the MAP you won’t be in the POM”*

# ESC TPIPTs

- **Air & Space C2 TPIPT**

- ESC is the Air Force Center of Excellence for C2 and the development center for the AF Air and Space C2 Agency

- **ISR TPIPT**

- ESC is responsible for developing key Air Force/Joint surveillance and intelligence programs

- ISR must be integrated with CAF C2 programs for mission success

- Placement of ISR TPIPT at ASC or SMC may result in uneven emphasis of air or space based solutions

- **Information Operations TPIPT**

- ESC is lead center for IW and IO system development

- **Weather TPIPT**

- ESC is lead center for development of weather systems

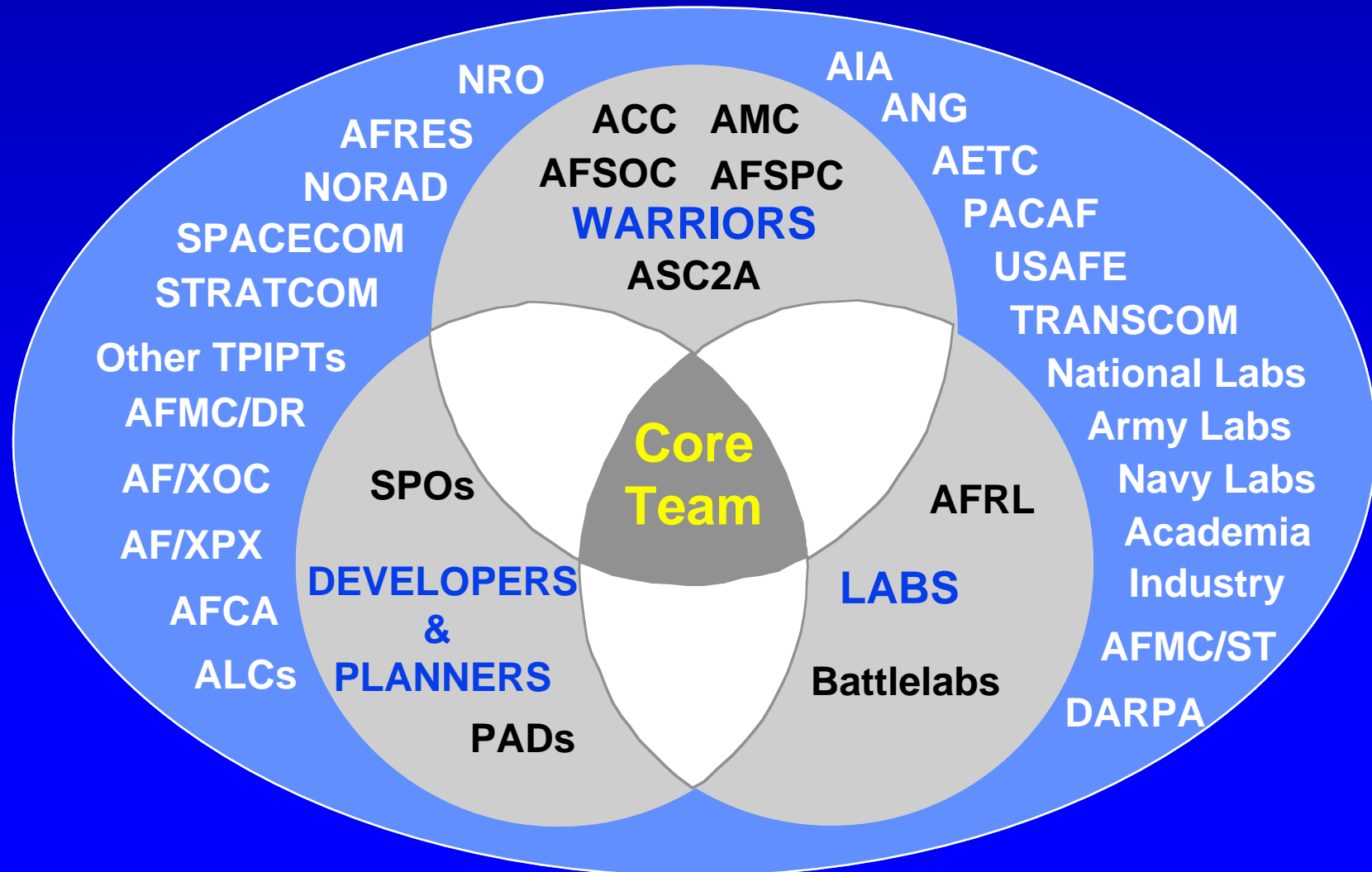
- **Other TPIPTs**

- ESC is involved in other Product Center TPIPTs

# ESC TPIPT Personnel

Organization	First_Name	Last_Name	Tel DSN	Tel Commercial	Email
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				DSN: 478-xxxx (or 478-1186-xxxx for 271 prefix)	

# The TPIPT Team

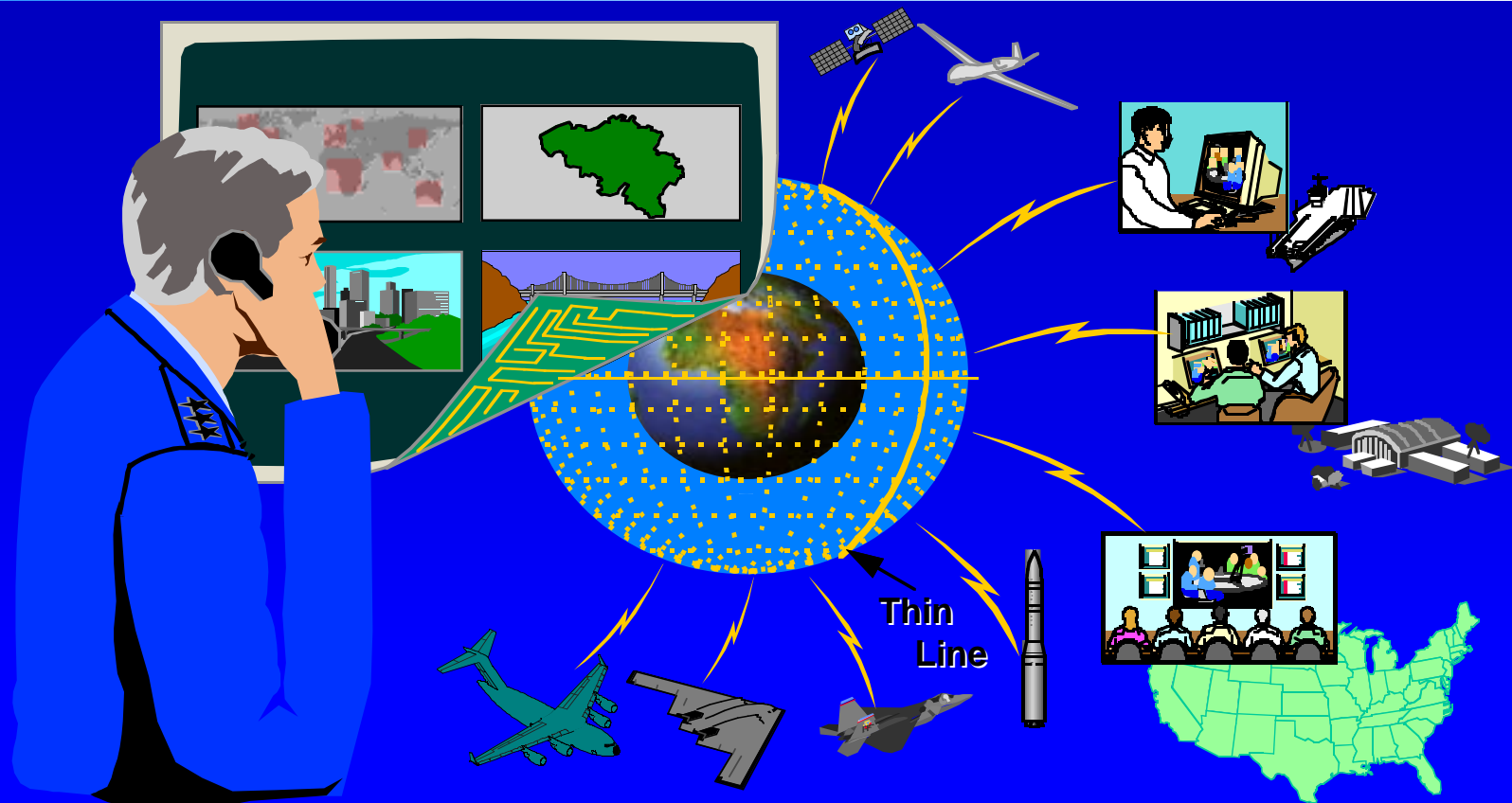


# *C2 Vision*

## Top-Level Operational Concept

Centralized Control

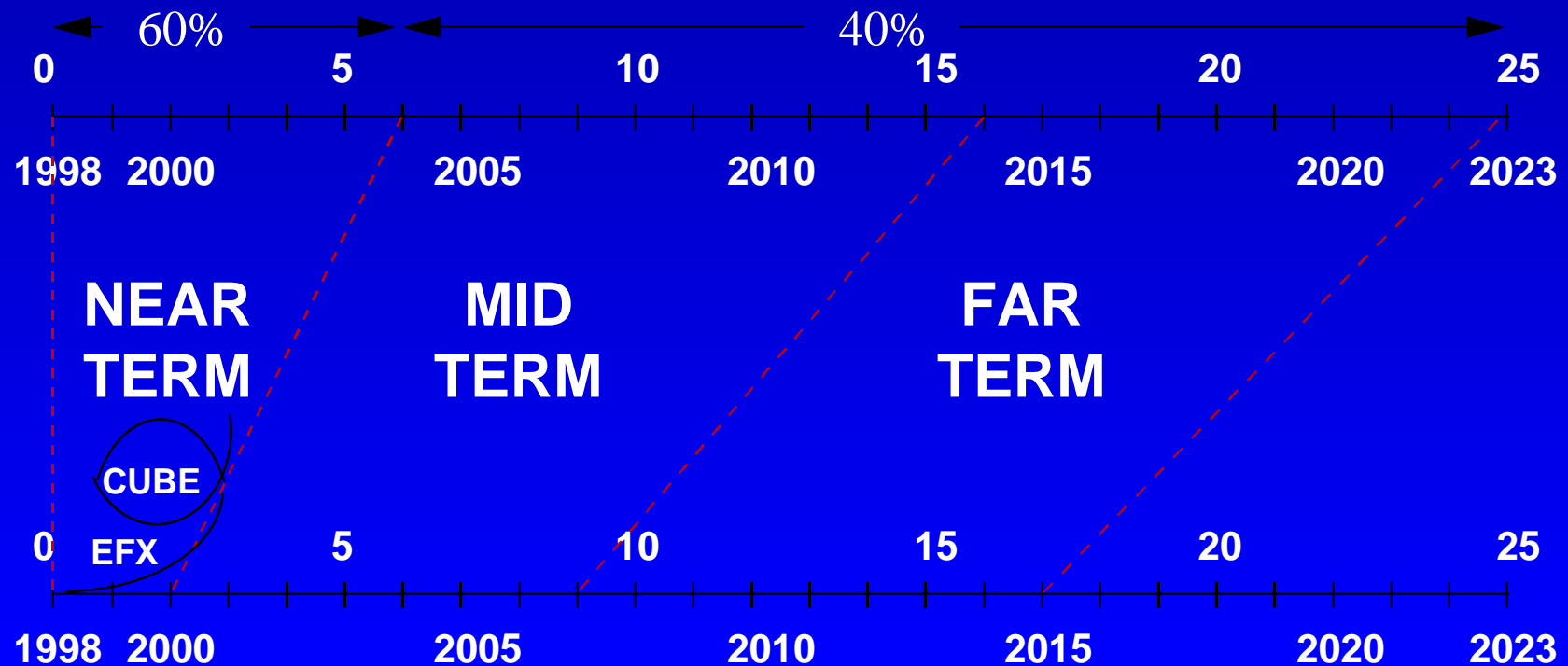
Decentralized Execution



*A joint distributed, collaborative environment,  
moving information -- not people*






# The Challenge

## Traditional: 25 Year Development Planning Cycle

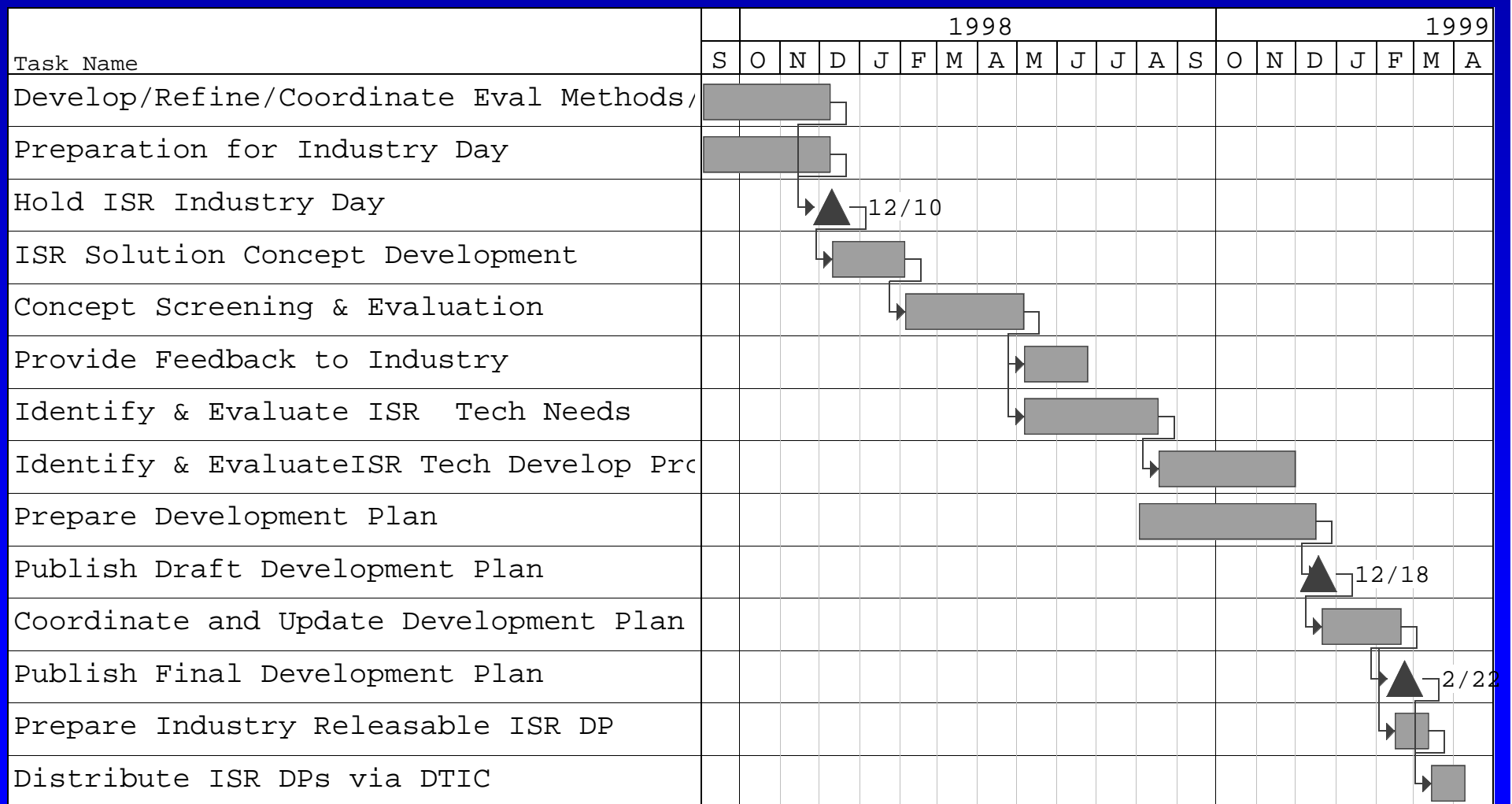


**ESC & ASC2A Challenge:**  
**18 Month Evolutional Cycle**  
**0-2 Year Development Planning Focus**

# ASC2 TPIPT Schedule

	Sep	Oct	Nov	Dec	Jan	Feb
<b>IPT</b> 	8-12					
<b>Detailed Roadmap v1.0</b>	30		14			
<b>Roadmap/Investment Strategy Decision Brief</b>		3 (Draft)				
<b>CAF CC Conf</b>		22-24				
<b>CORONA</b>			5-8		<u>Approval</u>	
<b>POM, Roadmap v2.0</b>					28	
<b>Development Plan (Draft)</b>					28	
<b>TPIPT Industry Day &amp; Concept Call</b>						?
<b>Development Plan (Update)</b>						Jun

# Draft FY 98 Top Level ISR Development Planning Schedule



# Weather TPIPT

## SCHEDULE

- |  |             |
|--|-------------|
| •Concept Call                                  | Apr 97      |
| •TPIPT Meeting                                 | Jul 97      |
| •Completed MSP                                 | Sep 97      |
| •Identify solutions and Tech Needs             | Continuous  |
| •Evaluate above                                | Continuous  |
| •Draft MSP complete and under review at AF/XOW |             |
| •Update of DP (Dec 95)                         | in-progress |
| • New concepts evaluated                       |             |
| • Complete                                     | Feb 98      |

# IO TPIPT Program - Master Schedule

Critical Path Milestones	Start Date	FY95	FY96	FY97	FY98	FY99	FY00	To Complete
CI MAP			▲					
Tech Dev Plan			▲					
Mission Area Assessment			▲					
Mission Needs Analysis				△				
CI Concept Call				△				
CI MAP				△				
AFPOM (00)							△	
Tech Dev Plan					△			
Mission Area Assessment					△			
Mission Needs Analysis					△			
CI Concept Call					△			
CI MAP					△			

# Industry Opportunity

## Concept Calls

- ASC2
- ISR
- Weather
- Information Operations
- ASC/XR
- SMC/XR
- HSC/XR

## HQ AFMC Web Site Link to TPIPTs

- TPIPT - Modernization Planning Home Page

[http://afmc.wpafb.af.mil/HQ-AFMC/DR/dri-home/mod\\_plng.htm](http://afmc.wpafb.af.mil/HQ-AFMC/DR/dri-home/mod_plng.htm)

# Air & Space C2 - Technology Needs

## Global Awareness - Databases, Fusion and Displays

- Adaptive Cueing
- Auto-cockpit update/cueing/threat warning
- Automatic language and syntax translation
- Data Compression
- Data Pedigree/Quality, Consistency and Accuracy
- Data retrieval options
- Direct Broadcast
- Distributed object management
- Feature-based retrieval
- Filtering and Analysis
- Force Structure Analysis
- High density storage
- High precision image/signal/data processing
- Imagery/video storage indexing
- Information Management
- Interactive Exploitation Analysis
- Multi-media fusion
- Multi-media hyperlinked reporting
- Multi-media reporting
- Multi-target tracking and ID
- Object oriented databases
- Real-time Automatic Target Recognition
- Real-time data visualization
- Sensor fusion
- Standard data elements
- Storage, Search and Retrieval
- Symbol-based fusion
- Tasking and scheduling of database storage
- Terrain Analysis
- Virtual reality presentations
- Visualization

# Air & Space C2 - Technology Needs

## Global Grid - C2 Infrastructure

- Automated language
- Bandwidth on demand
- Conformal antenna
- Distributed/scaleable architecture
- DNA computing
- Flexible information security
- Genetic algorithms
- Information filtering
- Information protection
- Intelligent routing and multiplexing
- Multi-level security
- Network-based processing
- Over-the-horizon communications from UAV or Space
- Programmable digital radios
- Quantum computing
- Satellite constellations
- Secure geolocation and timing
- Secure subnets

# Air & Space C2 - Technology Needs

## C2 Centers & Applications

### (Dynamic Assessment Planning and Execution)

- Active data agents
- Artificial intelligence
- Automated planning scheduling with case-based resource allocation
- Automated planning/scheduling
- Automatic analysis
- Continuous model-based assessment
- Distributed simulation
- Dynamic scheduling and target hand-off
- Faster than real-time modeling and simulation
- Filter selections
- Forecasting/prediction
- Full, real-time planning
- Goal-directed automatic battle damage assessment
- Integrated operations and intelligent agents and software
- Knowledge-based warfare
- Multi-media collaborative planning
- Offensive and Defensive information operations
- Predictive planning and preemption thrust